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An Evaluation of the Beef Cattle and Prices Paid Indexes Used in the
Federal Grazing Fee Formula

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Washington, D.C.

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U.S. DEPARTMENT OF COMMERCE
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AN EVALUATION OF THE BEEF CATTLE AND PRICES PAID INDEXES
USED IN THE FEDERAL GRAZING FEE FORMULA

By:

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Report

For

USDA-Forest Service (FS)

And

USDI-Bureau of Land Management (BLM)

Submitted By:

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15. Supplementary Notes

Special report for the USDA Forest Service and USDI Bureau of Land Management Grazing Fee Review and Evaluation in accordance with the Public Rangeland Improvement Act of 1978.

16. Abstract (Limit: 200 words)

The Public Rangelands Improvement Act of 1978 established the current fee formula, which is the $1.23 base value, multiplied by the annual forage value index plus the beef cattle price less the prices paid index. The beef cattle price used in the formula is based on actual marketing in the 11 State region. However, calves less than 500 pounds are excluded. This is a two-part report with the first part dealing with beef cattle prices; low price data are obtained, its uses and the data alternatives.

Beef cattle costs of production are covered in part two: Type, construction uses and limitations of indexes, together with the indexing of beef cattle production costs are evaluated.

17. Document Analysis a. Descriptors

Beef cattle	Indexing	Prices Paid Index
Cost of Livestock Production	Index	Input Cost Index
Indexes	Beef Cattle Prices	Beef Cattle Price Index

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

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THE BEEF CATTLE PRICE INDEX
BCPI

April 1984

The Beef Cattle Price Index

INTRODUCTION

Fees for grazing livestock on public lands are set annually using a formula established in the Public Rangelands Improvement Act of 1978 (PRIA). The formula has three components which are used to adjust the "fair market" value. These components are the Forage Value Index (FVI), the Beef Cattle Price Index (BCPI), and the Input Cost Index (ICI) which is also called the Prices Paid Index (PPI) in most earlier papers. This paper discusses the Beef Cattle Price Index including how price data are obtained, its uses and some data alternatives. The use and limitation of indexes in general are discussed in the paper Indexing Costs of Inputs for Beef Cattle Production.

LIVESTOCK PRICE SURVEY

The Statistical Reporting Service (SRS) of the U.S. Department of Agriculture (USDA) collect prices received by producers for cattle sold in 35 States. Since 1981, the livestock price survey has used a probability survey of auctions, stockyard, packers, and dealers. The sampled firms report the purchases of livestock from producers. Data provided are the number of head purchased, the total liveweight and the total dollars received by the producer before marketing costs (commissions, inspections, feed and water, trucking, etc.) are deducted. States surveyed on a monthly basis account for about 90 percent of the U.S. marketings.

Respondents report data for the previous months transactions. This information is summarized and expanded to the State level by the SRS field offices. The Washington, D.C. office uses the expanded data to weight State data to a U.S. average price.

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Respondents in the sample are selected from lists of all known auctions, stockyards, packers and buyers in a State. Frequency of selection is proportional to the volume of livestock handled annually. A new sample of firms is drawn about every 3 years.

SRS also estimates preliminary midmonth livestock prices for the current month. These prices are based on check data which are usually obtained from local Market News Service and auction-market reports. The price level of the check data around the middle of the current month is compared with the level for the previous month. This change in price level is applied to the revised Board price of the previous month to estimate a current midmonth price. This preliminary price is then revised the following month when the entire month's data are available from the probability survey.

The data used in the PRIA grazing fee formula are the entire month data so the prices are based on actual transactions during the 12 month November through October period. The average prices by State reflect the marketing of cattle through firms located in the State. No information is obtained on the State of origin of the livestock marketed.

CATTLE PRICES

Prices are published monthly for 35 States. This includes all States west of the Mississippi except Alaska, Hawaii and Nevada. Eastern States with no monthly estimates are the six New England States, Delaware, Maryland, New Jersey, North Carolina, South Carolina and West Virginia. Prices are shown for calves, steers and heifers, cows, and beef cattle. Calves are defined as animals averaging less than 500 pounds including both beef and dairy type. Steers and heifers are animals over 500 pounds sold for feeding or slaughter. Cows include beef cows sold for slaughter and herd replacement and cull dairy cows sold for slaughter. The beef cattle price

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is a combined price of "cows" and "steers and heifers" weighted by total liveweight marketed. All of these prices are published in <u>Agricultural Prices</u> issued on the last working day of each month. 1/

Data reliability is good at the U.S. level and for major producing States with numerous marketing points within the State. Coefficients of variation (CV's) for beef cattle price in major producing States are in the 1 to 2 percent range but may go over 5 percent in States with fewer marketings and a small number of marketing points.

USE OF DATA, ALTERNATIVES AND LIMITATIONS

Currently for the grazing fee computations, SRS prepares a special tabulation using the price data normally published in <u>Agricultural Prices</u> for 11 Western States and weighted on a November through October year. The prices used are for beef cattle which includes steers and heifers and cows. Calves are excluded. This series basically represents the average price for cattle that are marketed weighing over 500 pounds including both feeder and slaughter animals.

When using prices or price indexes it is essential to recognize whether the data are used to measure price levels or price changes. To measure price levels requires more precise sampling procedures and rigid specifications to define what is to be priced. Adequate measures of price changes require a consistent sample but need not include all categories of interest if price correlations are high. The SRS price series is designed to provide a reliable price at the U.S. level for livestock marketed during the month. State prices are then subject to more variation from both sampling and non-sampling errors. Price changes in the SRS prices may result from an actual change in price levels, changes in the classes of cattle marketed, changes in quality of marketings and changes in the geographic patterns of marketing. Thus, the SRS price series is measuring the price that producers actually receive for the product marketed. On the other hand,

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Agricultural Marketing Service (AMS) Market News Service (MNS) provides prices paid for livestock of specified weights and grades at selected marketings points. Thus, MNS is a better measure of price changes alone while the SRS series represents the commodity actually marketed.

Tables 1 through 6 have State and various regional price indexes on a 1982=100 base for various classes of cattle marketed by producers. These data show that State data are subject to more variation but as the data becomes more aggregated the reliabiity and stability are improved. In most cases the regional indexes are very similar to the U.S.

Tables 7 through 12 have the indexes on a 3-year base of 1981-83=100 for the same data set as tables 1 through 6. The shift to a 3-year base period makes little change in regional and U.S. indexes except for the cows and calves. The base selected should be comparable for all components used in a formula. The selection of the base may be more critical for the Input Cost Index. With year to year fluctuations typical in agriculture, a multiyear base reduces the impact of unusual situations that may occur in only a part of the universe of interest.

Tables 13 through 18 provides the year to year percent changes for the average price received by producers. This again demonstrates that regional prices have much less variability than individual State prices. Also, the regional percent changes are highly correlated with the U.S. percent change.

Actual average prices are listed in tables 19 through 24. This indicates actual price levels have much more variability than the relative change measured by year to year change or by an index series.

The chart ploting U.S. monthly prices for calves, steers and heifers, cows, and beef cattle for 1975 through 1983 indicates price patterns are very much alike for all classes of cattle. Calf prices show the most price fluctuation. At the U.S. level calves account for about 12 percent of the total liveweight marketed and

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cows 18 percent. Steers and heifers are the major contribution to the overall price. In the 17 Western States, calves account for about 11 percent of the marketing on a liveweight basis and cows 13 percent. The impact of adding calves to the beef cattle price basically getting an all cattle price, or adding calves to the steer and heifer price is shown by comparing tables 1 and 2 vs 3 and 4, 6 and 7 vs 8 and 9, 12 and 13 vs 14 and 15, and 18 and 19 vs 20 and 21.

Some concern has been expressed about fed cattle being included in the formula price. Starting in 1983, the reported data has been separated into animals averaging less than 500 pounds, those averaging 500 to 700 lbs. and those over 700 pounds. Special tabulations could be made to combine the animals in 500-700 category with calves and/or cows to obtain a group with most of the slaughter steers and heifers excluded. This would be a new series with no historic data prior to 1983. Its use would depend on the base years selected and the formula definition of what the beef cattle price component is to represent. The year to year change or the index change would show little difference from the similar data currently available.

SUMMARY

SRS's role in establishing grazing fees is to provide data requested and explain its statistical validity. Other agencies must develop concepts and if SRS data are to be used, make the final determination and it's acceptability.

The beef cattle price currently used in the formula is based on actual marketing in the 11 state region. However, calves averaging less than 500 pounds are not included in the price.

From a statistical viewpoint some of the factors to consider when selecting survey data to be used for administrive decision are

(1) Specifications - Are data conceptually consistent with intended use?

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(2) Data reliability - What are the sampling errors? What are the magnitude of non-sampling errors? How much are data influenced by missing reports and change of sample?

(3) Comparabilty - Are data comparable with other information when used in formulas - geographic average, index base, level of reliability?

(4) Availability - Are data published and available to public? When are data available? Will special tabulations be needed or survey procedures need to be changed?

TABLE 1:   INDEX OF CALF AND BEEF CATTLE PRICES (TOTAL MARKETINGS)

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
			1982=100			
ARIZONA	89%	120%	112%	103%	100%	97%
CALIFORNIA	90%	124%	119%	107%	100%	98%
COLORADO	83%	116%	110%	101%	100%	99%
IDAHO	105%	139%	124%	105%	100%	99%
KANSAS	89%	120%	112%	102%	100%	99%
MONTANA	129%	167%	142%	106%	100%	101%
NEBRASKA	83%	110%	107%	101%	100%	97%
NEVADA	123%	167%	148%	113%	100%	94%
NEW MEXICO	107%	142%	132%	108%	100%	100%
NORTH DAKOTA	106%	152%	134%	105%	100%	102%
OKLAHOMA	96%	136%	119%	106%	100%	97%
OREGON	105%	146%	131%	109%	100%	99%
SOUTH DAKOTA	91%	130%	121%	102%	100%	97%
TEXAS	84%	120%	111%	104%	100%	99%
UTAH	108%	158%	138%	106%	100%	100%
WASHINGTON	84%	113%	110%	102%	100%	98%
WYOMING	106%	136%	124%	104%	100%	97%
17 STATES	90%	124%	115%	103%	100%	98%
16 WESTERN	92%	125%	116%	103%	100%	98%
15 WESTERN	90%	124%	115%	103%	100%	98%
11 WESTERN	96%	130%	120%	104%	100%	99%
9 GR PLAINS	87%	122%	113%	103%	100%	98%
WEST COAST	89%	120%	114%	105%	100%	98%
MOUNTAIN	99%	130%	121%	103%	100%	100%
PLAINS	87%	121%	113%	103%	100%	98%
U S	86%	118%	111%	104%	100%	99%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
            NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
            OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
            NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
            OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
            NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
            SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
            NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
            OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
            UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
            TEXAS

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TABLE 2: INDEX OF CALF AND STEER AND HEIFER PRICES
(TOTAL MARKETINGS EXCLUDING COWS)

STATE AND REGION	:	MARKETING YEAR					
	:	1978	1979	1980	1981	1982	1983
	:			1982=100			
ARIZONA	:	86%	118%	110%	103%	100%	97%
CALIFORNIA	:	85%	117%	113%	104%	100%	98%
COLORADO	:	82%	114%	110%	101%	100%	99%
IDAHO	:	98%	131%	117%	103%	100%	99%
KANSAS	:	88%	119%	113%	103%	100%	99%
MONTANA	:	114%	146%	127%	104%	100%	101%
NEBRASKA	:	84%	112%	108%	101%	100%	97%
NEVADA	:	103%	140%	124%	106%	100%	94%
NEW MEXICO	:	94%	125%	119%	106%	100%	101%
NORTH DAKOTA	:	99%	144%	129%	104%	100%	102%
OKLAHOMA	:	94%	132%	116%	103%	100%	99%
OREGON	:	94%	131%	118%	106%	100%	98%
SOUTH DAKOTA	:	89%	127%	120%	103%	100%	97%
TEXAS	:	86%	119%	109%	102%	100%	99%
UTAH	:	97%	143%	125%	104%	100%	101%
WASHINGTON	:	84%	115%	111%	102%	100%	97%
WYOMING	:	103%	133%	122%	103%	100%	99%
	:						
17 STATES	:	89%	122%	113%	102%	100%	98%
16 WESTERN	:	90%	123%	114%	102%	100%	98%
15 WESTERN	:	89%	122%	113%	102%	100%	98%
11 WESTERN	:	92%	124%	115%	102%	100%	99%
9 GR PLAINS	:	88%	121%	113%	102%	100%	98%
	:						
WEST COAST	:	85%	117%	111%	103%	100%	98%
MOUNTAIN	:	94%	126%	116%	102%	100%	99%
PLAINS	:	88%	121%	113%	102%	100%	98%
	:						
U S	:	85%	116%	111%	102%	100%	99%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING

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WEST COAST: CALIFORNIA, OREGON, WASHINGTON

MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING

PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

TABLE 3: INDEX OF BEEF CATTLE PRICES (STEERS AND HEIFERS PLUS COWS)

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
	1982=100					
ARIZONA	85%	109%	108%	103%	100%	97%
CALIFORNIA	90%	121%	117%	106%	100%	98%
COLORADO	83%	110%	106%	101%	100%	95%
IDAHO	91%	122%	115%	105%	100%	95%
KANSAS	89%	120%	112%	101%	100%	99%
MONTANA	107%	139%	120%	108%	100%	100%
NEBRASKA	81%	107%	105%	101%	100%	96%
NEVADA	109%	143%	138%	116%	100%	98%
NEW MEXICO	113%	148%	137%	109%	100%	99%
NORTH DAKOTA	93%	129%	117%	106%	100%	101%
OKLAHOMA	92%	129%	116%	106%	100%	95%
OREGON	98%	132%	121%	109%	100%	99%
SOUTH DAKOTA	84%	116%	113%	101%	100%	97%
TEXAS	79%	113%	108%	103%	100%	96%
UTAH	97%	132%	123%	107%	100%	99%
WASHINGTON	77%	107%	101%	102%	100%	98%
WYOMING	96%	125%	114%	104%	100%	96%
17 STATES	85%	115%	109%	103%	100%	98%
16 WESTERN	86%	116%	109%	103%	100%	98%
15 WESTERN	85%	115%	109%	103%	100%	98%
11 WESTERN	89%	118%	112%	103%	100%	99%
9 GR PLAINS	83%	113%	108%	102%	100%	98%
WEST COAST	86%	116%	111%	105%	100%	98%
MOUNTAIN	90%	119%	112%	103%	100%	100%
PLAINS	83%	114%	108%	103%	100%	98%
U S	86%	117%	110%	103%	100%	98%

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WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

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TABLE 4:   INDEX OF STEER AND HEIFER PRICES

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
	1982=100					
ARIZONA	81%	108%	107%	103%	100%	97%
CALIFORNIA	84%	113%	110%	104%	100%	98%
COLORADO	81%	108%	105%	100%	100%	99%
IDAHO	86%	116%	111%	103%	100%	99%
KANSAS	87%	118%	113%	102%	100%	99%
MONTANA	97%	126%	116%	104%	100%	99%
NEBRASKA	83%	109%	106%	101%	100%	97%
NEVADA	92%	121%	118%	107%	100%	96%
NEW MEXICO	94%	123%	118%	106%	100%	99%
NORTH DAKOTA	89%	129%	118%	104%	100%	102%
OKLAHOMA	90%	124%	112%	101%	100%	98%
OREGON	90%	120%	110%	106%	100%	97%
SOUTH DAKOTA	82%	114%	112%	102%	100%	97%
TEXAS	81%	111%	106%	101%	100%	97%
UTAH	90%	121%	114%	104%	100%	100%
WASHINGTON	80%	109%	104%	102%	100%	97%
WYOMING	94%	123%	114%	102%	100%	97%
17 STATES	84%	113%	108%	101%	100%	98%
16 WESTERN	85%	114%	109%	102%	100%	98%
15 WESTERN	84%	113%	108%	101%	100%	98%
11 WESTERN	84%	112%	108%	102%	100%	98%
9 GR PLAINS	83%	112%	107%	101%	100%	98%
WEST COAST	83%	111%	108%	103%	100%	97%
MOUNTAIN	85%	113%	109%	101%	100%	99%
PLAINS	84%	114%	108%	101%	100%	98%
U S	84%	113%	109%	101%	100%	98%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
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              SOUTH DAKOTA, TEXAS, UTAH, WYOMING
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              NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                  OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
            UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
          TEXAS

TABLE 5:   INDEX OF COW PRICES

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
			1982=100			
ARIZONA	96%	130%	121%	110%	100%	101%
CALIFORNIA	92%	125%	116%	107%	100%	99%
COLORADO	98%	138%	123%	109%	100%	100%
IDAHO	96%	124%	118%	105%	100%	97%
KANSAS	92%	129%	118%	109%	100%	98%
MONTANA	103%	128%	120%	108%	100%	98%
NEBRASKA	94%	129%	118%	108%	100%	99%
NEVADA	98%	130%	121%	110%	100%	102%
NEW MEXICO	98%	132%	122%	109%	100%	103%
NORTH DAKOTA	92%	126%	118%	111%	100%	98%
OKLAHOMA	96%	138%	122%	110%	100%	98%
OREGON	96%	130%	119%	108%	100%	101%
SOUTH DAKOTA	89%	122%	118%	103%	100%	99%
TEXAS	94%	137%	122%	114%	100%	101%
UTAH	93%	129%	117%	107%	100%	103%
WASHINGTON	95%	127%	120%	109%	100%	102%
WYOMING	97%	124%	116%	107%	100%	100%
17 STATES	94%	131%	119%	109%	100%	100%
16 WESTERN	94%	129%	119%	108%	100%	99%
15 WESTERN	94%	131%	119%	109%	100%	99%
11 WESTERN	97%	129%	119%	107%	100%	100%
9 GR PLAINS	93%	132%	120%	110%	100%	100%
WEST COAST	93%	126%	117%	107%	100%	100%
MOUNTAIN	99%	130%	120%	108%	100%	99%
PLAINS	93%	132%	119%	110%	100%	99%
U S	93%	130%	119%	107%	100%	99%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

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TABLE 6:   INDEX OF CALF PRICES

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
			1982=100			
ARIZONA	100%	142%	121%	103%	100%	102%
CALIFORNIA	92%	138%	129%	108%	100%	103%
COLORADO	96%	145%	124%	104%	100%	104%
IDAHO	113%	152%	126%	106%	100%	103%
KANSAS	97%	150%	124%	106%	100%	102%
MONTANA	117%	149%	127%	104%	100%	103%
NEBRASKA	96%	139%	124%	106%	100%	103%
NEVADA	103%	141%	122%	106%	100%	103%
NEW MEXICO	97%	140%	124%	107%	100%	104%
NORTH DAKOTA	100%	147%	130%	105%	100%	104%
OKLAHOMA	102%	148%	127%	106%	100%	103%
OREGON	95%	135%	119%	109%	100%	103%
SOUTH DAKOTA	101%	143%	129%	107%	100%	101%
TEXAS	101%	149%	124%	105%	100%	105%
UTAH	96%	149%	126%	106%	100%	105%
WASHINGTON	102%	146%	138%	112%	100%	103%
WYOMING	111%	145%	128%	104%	100%	105%
17 STATES	102%	144%	125%	107%	100%	104%
16 WESTERN	102%	142%	124%	107%	100%	103%
15 WESTERN	102%	145%	126%	107%	100%	103%
11 WESTERN	104%	143%	125%	106%	100%	104%
9 GR PLAINS	101%	147%	128%	107%	100%	104%
WEST COAST	95%	138%	126%	109%	100%	103%
MOUNTAIN	107%	145%	124%	105%	100%	104%
PLAINS	100%	146%	127%	107%	100%	103%
U S	99%	148%	128%	107%	100%	103%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
              OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
              OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
              SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
              NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

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TABLE 7: INDEX OF CALF AND BEEF CATTLE PRICES (TOTAL MARKETINGS)

STATE AND REGION	:	MARKETING YEAR					
	:	1978 :	1979 :	1980 :	1981 :	1982 :	1983
	:			1981-83=100			
	:						
ARIZONA	:	89%	119%	112%	103%	100%	97%
CALIFORNIA	:	89%	122%	118%	105%	98%	97%
COLORADO	:	83%	115%	110%	101%	100%	99%
IDAHO	:	103%	138%	122%	103%	99%	98%
KANSAS	:	89%	120%	111%	102%	100%	99%
MONTANA	:	126%	164%	139%	104%	98%	99%
NEBRASKA	:	83%	111%	108%	102%	101%	97%
NEVADA	:	120%	163%	145%	111%	98%	91%
NEW MEXICO	:	104%	139%	129%	105%	98%	97%
NORTH DAKOTA	:	104%	148%	131%	103%	98%	99%
OKLAHOMA	:	95%	134%	116%	105%	99%	96%
OREGON	:	102%	142%	128%	106%	97%	97%
SOUTH DAKOTA	:	91%	130%	122%	102%	100%	98%
TEXAS	:	83%	119%	110%	103%	99%	98%
UTAH	:	105%	155%	135%	104%	98%	98%
WASHINGTON	:	83%	113%	110%	102%	100%	92%
WYOMING	:	105%	135%	123%	103%	100%	97%
	:						
17 STATES	:	90%	123%	114%	103%	99%	98%
16 WESTERN	:	91%	125%	115%	103%	100%	98%
15 WESTERN	:	90%	123%	114%	103%	99%	98%
11 WESTERN	:	96%	129%	118%	103%	99%	98%
9 GR PLAINS	:	87%	121%	113%	102%	100%	98%
	:						
WEST COAST	:	88%	119%	113%	104%	99%	97%
MOUNTAIN	:	98%	128%	120%	102%	99%	99%
PLAINS	:	87%	121%	112%	103%	100%	98%
	:						
U S	:	85%	117%	110%	103%	99%	98%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

TABLE 8:   INDEX OF CALF AND STEER AND HEIFER PRICES
(TOTAL MARKETINGS EXCLUDING COWS)

STATE AND REGION	:	MARKETING YEAR					
	:	1978	1979	1980	1981	1982	1983
	:			1981-83=100			
ARIZONA	:	86%	118%	110%	103%	100%	97%
CALIFORNIA	:	84%	116%	112%	103%	99%	98%
COLORADO	:	82%	114%	110%	101%	100%	99%
IDAHO	:	98%	130%	117%	102%	99%	99%
KANSAS	:	87%	118%	113%	102%	99%	98%
MONTANA	:	112%	144%	125%	102%	99%	99%
NEBRASKA	:	85%	113%	109%	102%	101%	98%
NEVADA	:	103%	140%	124%	106%	100%	94%
NEW MEXICO	:	92%	122%	116%	103%	98%	99%
NORTH DAKOTA	:	97%	141%	126%	102%	98%	100%
OKLAHOMA	:	93%	131%	116%	102%	99%	98%
OREGON	:	93%	129%	116%	105%	99%	97%
SOUTH DAKOTA	:	89%	127%	120%	103%	100%	97%
TEXAS	:	86%	119%	109%	102%	100%	99%
UTAH	:	96%	140%	123%	102%	98%	100%
WASHINGTON	:	84%	115%	111%	102%	100%	98%
WYOMING	:	103%	132%	121%	102%	100%	98%
17 STATES	:	89%	122%	113%	102%	100%	98%
16 WESTERN	:	90%	123%	114%	102%	100%	98%
15 WESTERN	:	89%	122%	113%	102%	100%	98%
11 WESTERN	:	91%	123%	114%	102%	100%	99%
9 GR PLAINS	:	88%	121%	113%	102%	100%	98%
WEST COAST	:	84%	116%	110%	103%	100%	98%
MOUNTAIN	:	94%	126%	115%	101%	100%	99%
PLAINS	:	88%	121%	112%	102%	100%	98%
U S	:	85%	116%	110%	102%	100%	98%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
             SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
             NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
FLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

TABLE 9: INDEX OF BEEF CATTLE PRICES (STEERS AND HEIFERS PLUS COWS)

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
	1981-83=100					
ARIZONA	85%	109%	108%	103%	100%	97%
CALIFORNIA	88%	119%	115%	105%	99%	97%
COLORADO	82%	110%	106%	101%	100%	99%
IDAHO	90%	121%	114%	103%	99%	98%
KANSAS	89%	120%	112%	101%	100%	99%
MONTANA	104%	136%	117%	105%	98%	97%
NEBRASKA	82%	108%	106%	102%	101%	97%
NEVADA	104%	137%	132%	111%	96%	94%
NEW MEXICO	110%	144%	134%	106%	97%	97%
NORTH DAKOTA	90%	127%	114%	103%	98%	99%
OKLAHOMA	91%	129%	115%	106%	100%	95%
OREGON	96%	128%	118%	106%	97%	96%
SOUTH DAKOTA	85%	117%	113%	101%	101%	98%
TEXAS	79%	112%	107%	103%	100%	98%
UTAH	95%	130%	121%	105%	98%	97%
WASHINGTON	77%	107%	101%	102%	100%	98%
WYOMING	96%	126%	114%	104%	100%	96%
17 STATES	84%	115%	109%	103%	100%	98%
16 WESTERN	86%	116%	109%	103%	100%	97%
15 WESTERN	84%	115%	109%	103%	100%	98%
11 WESTERN	88%	117%	111%	103%	99%	98%
9 GR PLAINS	83%	113%	108%	102%	100%	98%
WEST COAST	85%	115%	110%	104%	99%	97%
MOUNTAIN	89%	118%	111%	102%	99%	99%
PLAINS	83%	114%	108%	103%	100%	98%
U S	85%	116%	110%	103%	100%	97%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING

16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING

15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING

9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

WEST COAST: CALIFORNIA, OREGON, WASHINGTON

MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING

PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

TABLE 10:   INDEX OF STEER AND HEIFER PRICES

STATE AND REGION	:	MARKETING YEAR					
	:	1978	1979	1980	1981	1982	1983
	:			1981-83=100			
ARIZONA	:	82%	108%	106%	103%	100%	97%
CALIFORNIA	:	84%	112%	110%	103%	99%	97%
COLORADO	:	81%	108%	106%	101%	100%	99%
IDAHO	:	86%	115%	110%	102%	100%	99%
KANSAS	:	87%	117%	113%	102%	100%	98%
MONTANA	:	96%	124%	115%	103%	99%	98%
NEBRASKA	:	83%	110%	107%	102%	101%	98%
NEVADA	:	91%	120%	117%	106%	99%	95%
NEW MEXICO	:	92%	121%	116%	104%	98%	98%
NORTH DAKOTA	:	88%	126%	116%	102%	98%	100%
OKLAHOMA	:	90%	124%	112%	102%	100%	98%
OREGON	:	89%	119%	109%	105%	99%	96%
SOUTH DAKOTA	:	83%	114%	113%	102%	100%	98%
TEXAS	:	82%	112%	107%	101%	101%	98%
UTAH	:	88%	120%	113%	103%	99%	99%
WASHINGTON	:	80%	110%	104%	102%	100%	98%
WYOMING	:	95%	123%	114%	103%	100%	97%
	:						
17 STATES	:	84%	113%	109%	102%	100%	98%
16 WESTERN	:	85%	114%	109%	102%	100%	98%
15 WESTERN	:	84%	113%	109%	102%	100%	98%
11 WESTERN	:	84%	112%	108%	102%	100%	98%
9 GR PLAINS	:	84%	113%	108%	101%	100%	98%
	:						
WEST COAST	:	83%	111%	107%	103%	100%	97%
MOUNTAIN	:	85%	113%	109%	101%	100%	99%
PLAINS	:	84%	114%	109%	102%	100%	98%
	:						
U S	:	84%	114%	109%	102%	100%	98%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING

16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING

15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING

9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

WEST COAST: CALIFORNIA, OREGON, WASHINGTON

MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING

PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

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TABLE 11:   INDEX OF COW PRICES

STATE AND REGION	:	MARKETING YEAR					
	:	1978 :	1979 :	1980 :	1981 :	1982 :	1983
	:			1981-83=100			
	:						
ARIZONA	:	93%	126%	117%	106%	97%	98%
CALIFORNIA	:	90%	123%	114%	105%	98%	97%
COLORADO	:	95%	134%	119%	106%	97%	97%
IDAHO	:	95%	123%	117%	105%	99%	98%
KANSAS	:	90%	126%	115%	106%	98%	96%
MONTANA	:	101%	125%	117%	106%	98%	96%
NEBRASKA	:	91%	126%	115%	106%	97%	97%
NEVADA	:	94%	124%	116%	106%	96%	98%
NEW MEXICO	:	94%	127%	117%	105%	96%	99%
NORTH DAKOTA	:	90%	122%	115%	108%	97%	95%
OKLAHOMA	:	94%	135%	119%	107%	97%	96%
OREGON	:	93%	127%	116%	105%	97%	98%
SOUTH DAKOTA	:	88%	121%	117%	103%	99%	98%
TEXAS	:	89%	131%	117%	108%	95%	96%
UTAH	:	90%	125%	114%	103%	97%	100%
WASHINGTON	:	92%	122%	116%	105%	96%	98%
WYOMING	:	95%	122%	113%	105%	98%	97%
	:						
17 STATES	:	91%	127%	116%	106%	97%	97%
16 WESTERN	:	92%	126%	116%	105%	98%	97%
15 WESTERN	:	91%	127%	116%	106%	97%	97%
11 WESTERN	:	94%	126%	116%	105%	98%	97%
9 GR PLAINS	:	90%	126%	116%	106%	97%	97%
	:						
WEST COAST	:	91%	123%	114%	105%	98%	97%
MOUNTAIN	:	97%	127%	118%	105%	98%	97%
FLAINS	:	90%	128%	116%	106%	97%	97%
	:						
U S	:	91%	127%	116%	105%	98%	97%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
              OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
              OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
              SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
              NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                  OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
            UTAH, WYOMING
FLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
          TEXAS

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TABLE 12:   INDEX OF CALF PRICES

STATE AND REGION	1978	1979	1980	1981	1982	1983
			1981-83=100			
ARIZONA	99%	139%	119%	101%	98%	101%
CALIFORNIA	88%	133%	124%	104%	97%	99%
COLORADO	96%	141%	121%	102%	97%	101%
IDAHO	110%	147%	127%	102%	97%	100%
KANSAS	95%	146%	120%	104%	97%	99%
MONTANA	114%	145%	124%	101%	98%	101%
NEBRASKA	93%	135%	120%	103%	97%	100%
NEVADA	100%	137%	119%	103%	97%	100%
NEW MEXICO	94%	135%	119%	103%	96%	100%
NORTH DAKOTA	97%	143%	126%	102%	97%	101%
OKLAHOMA	99%	144%	123%	103%	97%	100%
OREGON	92%	130%	115%	105%	96%	99%
SOUTH DAKOTA	99%	140%	126%	105%	97%	98%
TEXAS	98%	144%	120%	102%	97%	102%
UTAH	95%	144%	122%	102%	97%	101%
WASHINGTON	97%	140%	131%	107%	96%	98%
WYOMING	108%	141%	125%	101%	97%	102%
17 STATES	95%	139%	121%	103%	97%	100%
16 WESTERN	96%	138%	121%	104%	97%	99%
15 WESTERN	99%	140%	121%	103%	97%	100%
11 WESTERN	101%	139%	121%	103%	97%	101%
9 GR PLAINS	97%	142%	123%	103%	96%	100%
WEST COAST	92%	133%	121%	105%	96%	99%
MOUNTAIN	104%	140%	121%	102%	97%	101%
PLAINS	97%	141%	123%	104%	97%	100%
U S	96%	143%	124%	104%	97%	100%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
               NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
               OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
               NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
               OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
               NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
               SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
               NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

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TABLE 13: CALF AND BEEF CATTLE PRICES (TOTAL MARKETINGS)

STATE AND REGION	:	MARKETING YEAR					
	:	1978	1979	1980	1981	1982	1983
	:	PERCENT OF PREVIOUS YEAR					
ARIZONA	:		134%	94%	92%	97%	97%
CALIFORNIA	:		138%	96%	89%	94%	98%
COLORADO	:		139%	96%	91%	99%	99%
IDAHO	:		133%	89%	85%	96%	99%
KANSAS	:		135%	93%	91%	98%	99%
MONTANA	:		129%	85%	75%	94%	101%
NEBRASKA	:		134%	97%	94%	99%	97%
NEVADA	:		136%	89%	77%	86%	94%
NEW MEXICO	:		133%	92%	82%	93%	100%
NORTH DAKOTA	:		143%	88%	79%	95%	102%
OKLAHOMA	:		142%	88%	89%	94%	97%
OREGON	:		139%	90%	83%	92%	99%
SOUTH DAKOTA	:		142%	94%	84%	99%	97%
TEXAS	:		143%	92%	93%	97%	99%
UTAH	:		147%	87%	77%	94%	100%
WASHINGTON	:		136%	97%	92%	98%	98%
WYOMING	:		128%	91%	84%	96%	97%
	:						
17 STATES	:		138%	92%	90%	97%	98%
16 WESTERN	:		136%	92%	89%	97%	98%
15 WESTERN	:		138%	92%	90%	97%	98%
11 WESTERN	:		135%	92%	87%	97%	99%
9 GR PLAINS	:		139%	93%	91%	97%	98%
	:						
WEST COAST	:		135%	95%	92%	95%	98%
MOUNTAIN	:		131%	93%	85%	97%	100%
PLAINS	:		140%	93%	91%	97%	98%
	:						
U S	:		137%	94%	93%	96%	99%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
             SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
             NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

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TABLE 14:   CALF AND STEER AND HEIFER PRICES
(TOTAL MARKETINGS EXCLUDING COWS)

STATE AND REGION	:	MARKETING YEAR					
	:	1978 :	1979 :	1980 :	1981 :	1982 :	1983
	:			PERCENT OF PREVIOUS YEAR			
ARIZONA	:		137%	94%	93%	97%	97%
CALIFORNIA	:		138%	97%	92%	96%	98%
COLORADO	:		139%	96%	92%	99%	99%
IDAHO	:		137%	90%	87%	97%	99%
KANSAS	:		135%	95%	91%	97%	99%
MONTANA	:		129%	87%	81%	97%	101%
NEBRASKA	:		134%	96%	93%	99%	97%
NEVADA	:		136%	89%	85%	94%	94%
NEW MEXICO	:		134%	95%	89%	94%	101%
NORTH DAKOTA	:		146%	89%	81%	96%	102%
OKLAHOMA	:		140%	88%	88%	97%	99%
OREGON	:		139%	90%	90%	94%	98%
SOUTH DAKOTA	:		142%	95%	86%	97%	97%
TEXAS	:		139%	92%	93%	98%	99%
UTAH	:		147%	88%	83%	96%	101%
WASHINGTON	:		136%	97%	92%	98%	97%
WYOMING	:		129%	92%	84%	97%	99%
17 STATES	:		137%	93%	90%	98%	98%
16 WESTERN	:		136%	93%	89%	96%	98%
15 WESTERN	:		137%	93%	90%	98%	98%
11 WESTERN	:		135%	93%	89%	96%	99%
9 GR PLAINS	:		136%	93%	90%	98%	98%
WEST COAST	:		138%	95%	93%	97%	98%
MOUNTAIN	:		134%	92%	88%	96%	99%
PLAINS	:		138%	93%	91%	98%	98%
U S	:		136%	95%	92%	98%	99%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
             SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
             NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

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TABLE 15: BEEF CATTLE PRICES (STEERS AND HEIFERS PLUS COWS)

STATE AND REGION	:	1978	:	1979	:	1980	:	1981	:	1982	:	1983
	:			MARKETING YEAR								
	:			PERCENT OF PREVIOUS YEAR								
	:											
ARIZONA	:			129%		99%		95%		97%		97%
CALIFORNIA	:			135%		97%		91%		94%		98%
COLORADO	:			133%		97%		95%		99%		99%
IDAHO	:			134%		94%		91%		56%		99%
KANSAS	:			135%		93%		90%		99%		99%
MONTANA	:			130%		86%		89%		93%		100%
NEBRASKA	:			132%		98%		96%		99%		96%
NEVADA	:			131%		97%		84%		87%		98%
NEW MEXICO	:			131%		93%		79%		92%		99%
NORTH DAKOTA	:			140%		90%		91%		95%		101%
OKLAHOMA	:			141%		90%		92%		94%		95%
OREGON	:			134%		92%		90%		92%		99%
SOUTH DAKOTA	:			138%		97%		90%		99%		97%
TEXAS	:			143%		96%		96%		97%		98%
UTAH	:			136%		93%		87%		94%		99%
WASHINGTON	:			139%		95%		101%		98%		98%
WYOMING	:			131%		91%		91%		56%		96%
	:											
17 STATES	:			136%		95%		94%		97%		98%
16 WESTERN	:			134%		95%		94%		97%		99%
15 WESTERN	:			136%		95%		94%		97%		98%
11 WESTERN	:			133%		95%		93%		97%		99%
9 GR PLAINS	:			137%		95%		95%		98%		98%
	:											
WEST COAST	:			135%		96%		94%		96%		98%
MOUNTAIN	:			132%		94%		92%		97%		100%
PLAINS	:			138%		95%		95%		98%		98%
	:											
U S	:			136%		94%		94%		97%		98%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING

16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING

15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING

9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

WEST COAST: CALIFORNIA, OREGON, WASHINGTON

MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING

PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

TABLE 16:   STEER AND HEIFER PRICES

STATE AND REGION	1978	1979	1980	1981	1982	1983
			PERCENT OF PREVIOUS YEAR			
ARIZONA		133%	99%	96%	97%	97%
CALIFORNIA		134%	98%	94%	96%	98%
COLORADO		133%	98%	95%	100%	99%
IDAHO		134%	96%	92%	98%	99%
KANSAS		135%	96%	90%	98%	99%
MONTANA		130%	92%	89%	96%	99%
NEBRASKA		132%	97%	95%	99%	97%
NEVADA		131%	97%	91%	94%	96%
NEW MEXICO		131%	96%	89%	95%	99%
NORTH DAKOTA		144%	92%	88%	96%	102%
OKLAHOMA		138%	90%	91%	99%	98%
OREGON		134%	92%	96%	95%	97%
SOUTH DAKOTA		138%	99%	91%	98%	97%
TEXAS		137%	95%	95%	99%	97%
UTAH		135%	94%	91%	96%	100%
WASHINGTON		136%	95%	98%	96%	97%
WYOMING		130%	92%	90%	98%	97%
17 STATES		135%	96%	94%	99%	98%
16 WESTERN		134%	96%	93%	98%	98%
15 WESTERN		135%	96%	94%	99%	98%
11 WESTERN		133%	97%	94%	98%	98%
9 GR PLAINS		135%	96%	94%	99%	98%
WEST COAST		134%	97%	96%	97%	97%
MOUNTAIN		132%	96%	93%	99%	99%
PLAINS		136%	95%	93%	99%	98%
U S		135%	96%	93%	99%	98%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING

16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING

15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING

9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

WEST COAST: CALIFORNIA, OREGON, WASHINGTON

MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING

PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

TABLE 17: COW PRICES

STATE AND REGION	:	MARKETING YEAR					
	:	1978	1979	1980	1981	1982	1983
	:	PERCENT OF PREVIOUS YEAR					
ARIZONA	:		135%	93%	91%	91%	101%
CALIFORNIA	:		136%	93%	92%	94%	99%
COLORADO	:		141%	89%	89%	92%	100%
IDAHO	:		129%	96%	89%	95%	97%
KANSAS	:		140%	91%	92%	92%	98%
MONTANA	:		124%	94%	90%	93%	98%
NEBRASKA	:		138%	92%	91%	92%	99%
NEVADA	:		133%	93%	91%	91%	102%
NEW MEXICO	:		134%	93%	89%	92%	103%
NORTH DAKOTA	:		136%	94%	94%	90%	98%
OKLAHOMA	:		144%	88%	90%	91%	98%
OREGON	:		135%	91%	91%	92%	101%
SOUTH DAKOTA	:		137%	97%	88%	97%	99%
TEXAS	:		147%	89%	93%	86%	101%
UTAH	:		139%	91%	91%	94%	103%
WASHINGTON	:		133%	95%	91%	92%	102%
WYOMING	:		126%	93%	92%	94%	100%
	:						
17 STATES	:		140%	91%	91%	92%	100%
16 WESTERN	:		137%	92%	91%	93%	99%
15 WESTERN	:		140%	91%	91%	92%	99%
11 WESTERN	:		133%	93%	90%	93%	100%
9 GR PLAINS	:		142%	91%	91%	91%	100%
	:						
WEST COAST	:		136%	93%	92%	93%	100%
MOUNTAIN	:		131%	93%	89%	93%	99%
PLAINS	:		143%	90%	92%	91%	99%
	:						
U S	:		140%	91%	90%	93%	99%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING
FLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

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TABLE 18: CALF PRICES

STATE AND REGION		MARKETING YEAR				
	:	1978	1979	1980	1981	1982	1983
	:	PERCENT OF PREVIOUS YEAR				
ARIZONA	:		142%	85%	85%	97%	102%
CALIFORNIA	:		150%	93%	84%	93%	103%
COLORADO	:		147%	86%	84%	96%	104%
IDAHO	:		134%	83%	84%	94%	103%
KANSAS	:		154%	83%	86%	94%	102%
MONTANA	:		128%	86%	82%	96%	103%
NEBRASKA	:		146%	89%	86%	94%	103%
NEVADA	:		138%	87%	87%	94%	103%
NEW MEXICO	:		144%	89%	86%	93%	104%
NORTH DAKOTA	:		147%	88%	81%	95%	104%
OKLAHOMA	:		145%	85%	84%	94%	103%
OREGON	:		142%	88%	91%	92%	103%
SOUTH DAKOTA	:		142%	90%	83%	93%	101%
TEXAS	:		147%	83%	85%	95%	105%
UTAH	:		151%	85%	84%	94%	105%
WASHINGTON	:		143%	94%	81%	90%	103%
WYOMING	:		130%	88%	81%	96%	105%
	:						
17 STATES	:		141%	87%	85%	94%	104%
16 WESTERN	:		140%	87%	86%	94%	103%
15 WESTERN	:		141%	87%	85%	94%	103%
11 WESTERN	:		137%	87%	85%	94%	104%
9 GR PLAINS	:		146%	87%	84%	93%	104%
	:						
WEST COAST	:		144%	91%	86%	92%	103%
MOUNTAIN	:		135%	86%	84%	95%	104%
PLAINS	:		146%	87%	84%	93%	103%
	:						
U S	:		150%	87%	83%	93%	103%

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
             SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
             NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

TABLE 19: AVERAGE PRICES RECEIVED BY PRODUCERS FOR CALVES AND
           BEEF CATTLE (TOTAL MARKETINGS)

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
	DOLLARS PER CWT					
ARIZONA	53.90	72.01	67.44	61.95	60.24	58.59
CALIFORNIA	49.19	67.77	65.12	58.08	54.50	53.56
COLORADO	51.62	71.69	68.56	62.69	62.04	61.62
IDAHO	57.47	76.55	67.92	57.46	54.93	54.55
KANSAS	52.40	70.83	65.64	60.00	58.79	58.40
MONTANA	65.10	84.24	71.65	53.40	50.33	50.81
NEBRASKA	51.07	68.24	66.26	62.44	61.76	59.71
NEVADA	57.44	78.19	69.48	53.16	46.87	43.85
NEW MEXICO	55.38	73.83	69.23	55.71	51.81	51.76
NORTH DAKOTA	57.00	81.59	72.16	56.65	53.72	54.74
OKLAHOMA	52.65	74.70	65.84	58.34	55.11	53.64
OREGON	51.23	71.14	64.15	53.25	48.89	48.52
SOUTH DAKOTA	54.13	77.12	72.18	60.82	59.41	57.92
TEXAS	50.69	72.38	66.86	62.41	60.24	59.74
UTAH	54.28	79.73	69.72	53.56	50.41	50.50
WASHINGTON	51.45	69.83	67.99	62.83	61.62	60.52
WYOMING	61.55	79.08	72.13	60.46	58.31	56.73
17 STATES	53.34	73.40	67.78	61.07	59.14	58.20
16 WESTERN	54.00	73.66	67.99	60.70	58.78	57.65
15 WESTERN	53.32	73.40	67.76	61.04	59.13	58.23
11 WESTERN	55.13	74.34	68.34	59.23	57.16	56.79
9 GR PLAINS	52.62	73.31	68.10	61.77	60.15	59.14
WEST COAST	49.93	67.66	64.43	59.16	56.40	55.41
MOUNTAIN	57.10	74.61	69.46	59.26	57.52	57.48
PLAINS	52.14	72.74	67.41	61.62	59.89	58.81
U S	49.14	67.44	63.35	59.16	57.06	56.23

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
             SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
             NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

TABLE 20:   AVERAGE PRICE RECEIVED BY PRODUCERS FOR CALVES AND
STEERS AND HEIFERS (TOTAL MARKETINGS EXCLUDING COWS)

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
	DOLLARS PER CWT					
ARIZONA	54.75	74.79	70.04	65.15	63.42	61.65
CALIFORNIA	51.32	70.70	68.41	63.08	60.49	59.54
COLORADO	52.11	72.31	69.66	63.93	63.56	62.86
IDAHO	58.86	76.49	70.36	61.56	59.92	59.48
KANSAS	53.38	72.23	68.97	62.56	60.93	60.30
MONTANA	67.43	86.68	75.36	61.39	59.25	59.27
NEBRASKA	52.89	70.65	68.08	63.52	62.92	61.17
NEVADA	58.76	80.11	71.13	60.65	57.14	53.99
NEW MEXICO	56.23	75.10	71.20	63.55	59.99	60.77
NORTH DAKOTA	58.45	85.14	75.98	61.72	59.12	60.54
OKLAHOMA	56.59	79.40	70.09	61.91	60.36	59.73
OREGON	52.41	73.00	65.41	59.15	55.65	54.66
SOUTH DAKOTA	55.86	79.50	75.26	64.47	62.61	61.03
TEXAS	53.98	74.76	68.65	63.94	62.75	61.99
UTAH	56.14	82.45	72.17	60.05	57.59	58.41
WASHINGTON	53.27	72.53	70.12	64.47	63.27	61.59
WYOMING	64.17	82.58	75.80	63.82	62.14	61.26
17 STATES	55.41	75.80	70.38	63.43	62.16	61.20
16 WESTERN	55.73	76.06	70.80	63.29	61.96	60.90
15 WESTERN	55.40	75.80	70.38	63.41	62.14	61.21
11 WESTERN	56.63	76.48	70.83	63.20	61.79	61.11
9 GR PLAINS	54.93	75.78	70.52	63.62	62.62	61.63
WEST COAST	51.86	71.57	67.94	63.30	61.27	60.03
MOUNTAIN	58.33	78.39	71.89	63.15	62.03	61.62
PLAINS	54.55	75.31	70.08	63.50	62.29	61.23
U S	52.25	71.16	67.71	62.60	61.24	60.33

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
              OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
              OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
              SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
              NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                  OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

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TABLE 21: AVERAGE PRICE RECEIVED BY PRODUCERS FOR BEEF CATTLE

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
	DOLLARS PER CWT					
ARIZONA	50.80	65.70	65.10	61.80	60.10	58.20
CALIFORNIA	48.80	65.80	63.60	57.90	54.40	53.30
COLORADO	51.00	67.90	65.60	62.40	61.90	61.30
IDAHO	49.90	66.90	62.90	57.20	54.70	54.20
KANSAS	52.10	70.10	65.30	59.00	58.40	57.80
MONTANA	51.50	67.10	58.00	51.90	48.20	48.00
NEBRASKA	50.10	66.30	64.80	62.30	61.70	59.50
NEVADA	48.40	63.60	61.40	51.30	44.40	43.40
NEW MEXICO	52.90	69.20	64.30	51.00	46.80	46.50
NORTH DAKOTA	48.40	67.70	61.10	55.30	52.30	52.90
OKLAHOMA	49.60	69.90	62.70	57.40	54.10	51.40
OREGON	46.70	62.60	57.50	51.80	47.50	46.90
SOUTH DAKOTA	49.40	68.10	66.00	59.10	58.60	57.10
TEXAS	47.70	68.20	65.20	62.40	60.40	59.30
UTAH	47.60	64.80	60.30	52.30	49.10	48.40
WASHINGTON	47.40	65.90	62.40	62.90	61.80	60.60
WYOMING	54.70	71.40	65.00	59.00	56.90	54.50
17 STATES	49.89	67.86	64.32	60.72	58.96	57.68
16 WESTERN	50.48	67.77	64.08	60.26	58.53	57.13
15 WESTERN	49.92	67.91	64.36	60.67	58.94	57.68
11 WESTERN	50.46	66.98	63.55	58.61	56.86	56.28
9 GR FLAINS	49.57	68.05	64.64	61.47	60.06	58.65
WEST COAST	48.42	65.36	62.67	59.08	56.46	55.31
MOUNTAIN	51.32	67.75	63.92	58.68	57.06	56.80
FLAINS	49.57	68.35	64.71	61.29	59.78	58.31
U S	48.50	66.10	62.40	58.60	56.70	55.50

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
             OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
             NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
             SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
             NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT FLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO.
           UTAH, WYOMING
FLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

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TABLE 22: AVERAGE PRICE RECEIVED BY PRODUCERS FOR STEERS AND HEIFER

STATE AND REGION	1978	1979	1980	1981	1982	1983
			DOLLARS PER CWT			
ARIZONA	51.80	68.70	68.30	65.30	63.60	61.50
CALIFORNIA	51.40	69.10	67.50	63.40	61.10	59.80
COLORADO	51.50	68.50	66.80	63.70	63.50	62.60
IDAHO	51.60	69.30	66.60	61.50	60.00	59.40
KANSAS	53.10	71.50	68.70	61.90	60.80	59.90
MONTANA	57.00	73.90	68.50	61.00	58.80	58.40
NEBRASKA	52.00	68.70	66.70	63.40	62.90	61.00
NEVADA	51.50	67.70	65.90	59.70	56.00	53.50
NEW MEXICO	54.00	70.60	68.00	60.80	57.50	57.00
NORTH DAKOTA	52.50	75.60	69.30	61.30	58.80	59.80
OKLAHOMA	54.60	75.50	68.00	61.70	60.90	59.40
OREGON	49.70	66.40	60.90	58.60	55.50	53.70
SOUTH DAKOTA	51.30	70.80	69.90	63.30	62.30	60.50
TEXAS	51.50	70.70	67.30	64.10	63.50	61.90
UTAH	51.20	69.30	65.20	59.40	57.10	57.10
WASHINGTON	50.80	69.30	65.80	64.60	63.50	61.70
WYOMING	58.00	75.60	69.90	62.80	61.40	59.50
17 STATES	52.35	70.53	67.60	63.28	62.36	60.99
16 WESTERN	52.55	70.48	67.68	63.05	62.03	60.66
15 WESTERN	52.37	70.56	67.63	63.25	62.35	60.98
11 WESTERN	52.35	69.57	67.16	63.12	61.97	60.94
9 GR PLAINS	52.27	70.67	67.53	63.47	62.87	61.41
WEST COAST	51.15	68.76	66.45	63.57	61.81	60.27
MOUNTAIN	52.80	69.92	67.45	62.92	62.05	61.28
PLAINS	52.35	71.07	67.81	63.33	62.52	61.00
U S	51.70	69.80	66.90	62.40	61.50	60.10

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING

16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING

15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING

9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

WEST COAST: CALIFORNIA, OREGON, WASHINGTON

MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING

PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

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TABLE 23: AVERAGE PRICE RECEIVED BY PRODUCERS FOR COWS

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
	DOLLARS PER CWT					
ARIZONA	36.10	48.90	45.50	41.20	37.60	38.00
CALIFORNIA	36.50	49.80	46.20	42.40	39.70	39.30
COLORADO	37.70	53.30	47.20	42.00	38.50	38.40
IDAHO	37.10	48.00	45.90	40.90	38.80	37.70
KANSAS	35.60	49.90	45.60	42.00	38.60	38.00
MONTANA	38.50	47.70	44.80	40.30	37.40	36.80
NEBRASKA	36.20	50.00	45.80	41.90	38.70	38.50
NEVADA	35.20	46.80	43.60	39.80	36.10	36.90
NEW MEXICO	35.90	48.20	44.60	39.80	36.60	37.60
NORTH DAKOTA	34.80	47.40	44.60	41.80	37.70	36.80
OKLAHOMA	35.30	50.70	44.70	40.30	36.70	36.00
OREGON	35.60	48.20	44.10	40.10	37.00	37.20
SOUTH DAKOTA	36.20	49.70	48.00	42.10	40.70	40.20
TEXAS	35.00	51.40	45.80	42.60	37.40	37.80
UTAH	34.40	47.70	43.30	39.40	36.90	38.00
WASHINGTON	35.90	47.70	45.20	41.00	37.60	38.40
WYOMING	40.50	51.90	48.20	44.50	41.70	41.50
17 STATES	35.86	50.03	45.66	41.65	38.29	38.11
16 WESTERN	36.27	49.65	45.63	41.49	38.50	38.18
15 WESTERN	35.86	50.10	45.68	41.66	38.35	38.14
11 WESTERN	37.04	49.32	45.71	41.22	38.37	38.19
9 GR PLAINS	35.60	50.54	45.76	41.84	38.19	38.14
WEST COAST	36.31	49.30	45.76	41.94	39.13	38.97
MOUNTAIN	37.63	49.33	45.69	40.87	37.94	37.69
PLAINS	35.38	50.41	45.62	41.92	38.24	38.04
U S	35.80	50.00	45.70	41.30	38.50	38.10

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
              OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING
16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,
              OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING
15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA,
              NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON,
              SOUTH DAKOTA, TEXAS, UTAH, WYOMING
11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA,
              NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING
9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA,
                 OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING
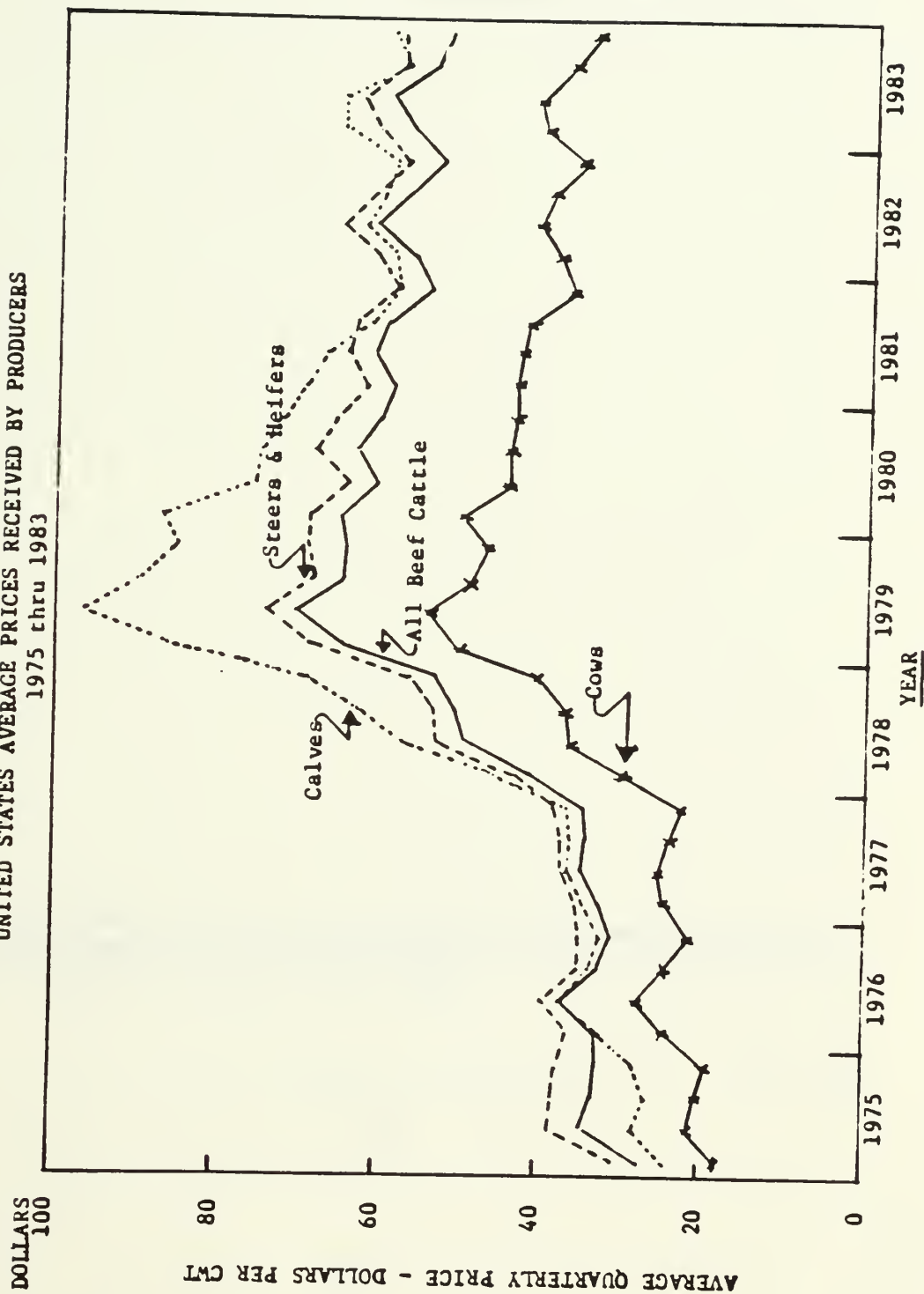WEST COAST: CALIFORNIA, OREGON, WASHINGTON
MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO,
           UTAH, WYOMING
PLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA,
         TEXAS

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TABLE 24: AVERAGE PRICE RECEIVED BY PRODUCERS FOR CALVES

STATE AND REGION	MARKETING YEAR					
	1978	1979	1980	1981	1982	1983
	DOLLARS PER CWT					
ARIZONA	61.60	87.50	74.60	63.70	61.70	63.20
CALIFORNIA	51.00	76.70	71.60	60.20	55.70	57.10
COLORADO	63.50	93.60	80.20	67.50	64.60	66.90
IDAHO	66.60	89.30	74.30	62.40	58.90	60.50
KANSAS	60.20	92.60	76.50	65.90	61.90	63.10
MONTANA	70.30	89.80	76.80	62.70	60.30	62.40
NEBRASKA	60.70	88.40	78.70	67.50	63.50	65.50
NEVADA	61.20	84.20	72.90	63.10	59.60	61.40
NEW MEXICO	60.80	87.60	77.60	67.10	62.60	65.20
NORTH DAKOTA	60.10	88.60	78.20	63.10	60.10	62.80
OKLAHOMA	60.30	87.30	74.60	62.70	58.90	60.40
OREGON	53.50	76.00	66.90	61.00	56.10	57.90
SOUTH DAKOTA	64.90	91.90	82.90	68.90	64.10	64.60
TEXAS	60.10	88.30	73.60	62.50	59.40	62.50
UTAH	58.70	88.70	75.50	63.30	59.40	62.50
WASHINGTON	54.90	78.60	74.00	60.00	53.80	55.20
WYOMING	71.70	93.50	82.50	67.00	64.40	67.30
17 STATES	61.97	87.53	76.03	64.84	60.65	62.78
16 WESTERN	62.34	87.39	76.38	65.57	61.39	62.93
15 WESTERN	62.20	87.79	76.20	64.88	60.70	62.82
11 WESTERN	63.03	86.40	75.21	63.86	60.32	62.63
9 GR PLAINS	61.40	89.37	77.68	65.20	60.88	63.25
WEST COAST	52.99	76.56	69.95	60.34	55.57	57.09
MOUNTAIN	66.44	89.60	77.03	65.03	61.91	64.42
PLAINS	60.82	88.93	77.09	65.12	60.74	62.82
U S	59.10	88.70	76.80	64.00	59.60	61.70

17 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, WYOMING

16 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, UTAH, WASHINGTON, WYOMING

15 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

11 WESTERN: ARIZONA, CALIFORNIA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, OREGON, UTAH, WASHINGTON, WYOMING

9 GREAT PLAINS: COLORADO, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, WYOMING

WEST COAST: CALIFORNIA, OREGON, WASHINGTON

MOUNTAIN: ARIZONA, COLORADO, IDAHO, MONTANA, NEVADA, NEW MEXICO, UTAH, WYOMING

FLAINS: KANSAS, NEBRASKA, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS

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UNITED STATES AVERAGE PRICES RECEIVED BY PRODUCERS
1975 thru 1983

Steers & Heifers

Calves

All Beef Cattle

Cows

DOLLARS
100

80

60

40

20

0

AVERAGE QUARTERLY PRICE - DOLLARS PER CWT

1975   1976   1977   1978   1979   1980   1981   1982   1983

YEAR

REFERENCE

(1)   U.S. Department of Agriculture, <u>Agricultural Prices</u>, Washington, D.C.; U.S. Government Printing Office.

INDEXING COST OF INPUTS FOR
BEEF CATTLE PRODUCTION

April 1984

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INDEXING COST OF INPUTS FOR
BEEF CATTLE PRODUCTION

INTRODUCTION:

The formula used for adjusting fees for grazing livestock on public land established in the Public Rangelands Improvement Act of 1978 (PRIA) uses a differential between beef cattle price index (BCPI) and an index of beef cattle production cost to adjust the rates for ability to pay. The index for beef cattle production costs is computed by reweighting selected Statistical Reporting Service (SRS) prices paid indexes based on cost of production for cow-calf operations in the Western States. This paper has two parts. The first part discusses indexes in general—types, construction, uses and limitations. The second part specifically addresses the indexing of beef cattle production costs — its construction, coverage, suitability, and magnitude of change for selected alternatives in its construction.

INDEXING

Indexes measure changes from some base period to another point in time. Usually the objective is to combine a large number of data sets into one or a few meaningful numbers. When an index is for a single item, it is a simple index. Simple indexes are computed by dividing the item value for the selected base period and converting the ratio to a percentage. The Beef Cattle Price Index (BCPI) is a simple index. A composite index is made up of a number of items. This complicates index computations because units and importance of each item may vary. Usually some type of weighting system must be developed. The discussion from this point will relate to composite indexes.

Most composite indexes are of the following form

$$\text{Index} = \frac{(\text{Current Price X Quantity})}{(\text{Base Price X Quantity})} \times 100$$

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The denominator is the base period and the numerator is current period or another reference period. Since the base period is fixed the denominator is a constant.

From this basic form three types of indexes can be generated. If the price in the numerator is the only varible, the index is a fixed weight price index. If the quantity is the variable, then the index is a fixed weight output or production index. Varying both the price and quantity produces a value of output or an expenditure index depending on data used.

In order for an analyst to use indexes, he must know the composition and components of the index. A price index alone can only provide a data user with the relative price change while an expenditure index alone will only tell us what has happened to the production or consumption. For instance the expenditure index for farm machinery dipped 2 percent from 1980 to 1981 and 18 percent from 1981 to 1982. The price indexes for farm machinery were increasing 8 to 10 percent per year rate during this same time period. Now we can see that higher prices were more than offset by the reduced consumption during this period. Therefore, in order to get a true picture of the economic condition of a segment of the economy through index numbers, one may need to look at multiple sets of index numbers for the same commodity group.

The use and purpose of an index determines the design of the index. The objectives of general purpose index like the index of prices received by farmers is to measure the average change in the price of all agricultural commodities. Ruist [1] in 1968 summed up the problem in a simple sentence. "The problem that arises is how to combine the relative changes in the prices of various commodities into a single index number that can meaningfully be interpreted as a measure of the relative change in the general price levels." In order to combine prices of

commodities into a single index number, it is necessary to aggregate the prices of the commodity items into appropriate grouping. In order to aggregate prices, the commodity items must be represented by quantities consumed or produced. For instance the best way to weight the prices received by farmers for food grains to an aggregated food grain price index would be to weight the price for each grain by the quantity marketed. For a prices paid index, the commodity group price would be obtained by weighting the prices for each of the items by the quantity purchased by farmers. For instance a composite energy price would be the price for each item in the energy group weighted by the quantity consumed by farmers and ranchers. Considerable difficulty is experienced in obtaining quantities consumed by farmers and ranchers for products that are consumed by other sectors of the economy.

Weights for the Index of Prices Paid by Farmers are based on farm production expenditure survey data. Expenditures are grouped into the index categories and items are selected to represent the expenditures. Expenditures are divided by the average price of the selected items during the base period to obtain quantity weights. In this manner an index with 100 items priced may represent a 1,000 or more different items acutally purchased. This same procedure can be used when weights are based on cost of production.

The choice of the base period is extremely important. Generally, the base should be a recent period when all the components of interest have a "normal" relationship and prices are relatively stable. Since the base period is 100 by definition, many people believe an index value of around 100 is desirable. For example, 1977 was selected as the base period for general purpose indexes by the Office of Management and Budget. Economic conditions were reasonably "normal" for most sectors of the economy. One exception was the agricultural sector where

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prices were generally depressed. As an example, if farm prices averaged 20 index points above the other sectors, many might say agriculture should be well off when in fact it still might not be "as well off" as the other sectors. Using the average of several years, a multiyear base period, is one way of helping to reduce the impact of the unusual situations.

Complete data for weights and prices series consistent with the design of an index are not usually available. Some of the weights may be approximated using secondary data or general knowledge. However, suitable price series are a "must" for computation of the index. Often the availability of prices will enter into the selection of items included in the index. The price series should be continuous back to the base period and be a continuing series available on a timely basis.

Some of the factors to consider when selecting items to include in an index and the price series to represent the items are:

(1) Is product specification adequate?

(2) Is the volume of sales adequate to obtain reliable prices?

(3) Does the item have limited regional useage?

(4) Is the item subject to rapid changes in design or function and how does this impact on prices?

(5) Is the item likely to be outmoded in the near future?

(6) Are prices reported based on transactions or are list prices reported? What adjustments are made for discounts, rebates, credit, delivery, sales tax, etc.?

(7) How reliable are data — sample size, and magnitude of sampling and non sampling errors?

(8) How frequently are prices surveyed and how volatile are the prices?

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Purchasing and expenditure patterns change over time so the index should be structured to accommodate changes over time. Some items will become outmoded so new items may need to be incorporated. However, substitution of items in an index should be limited since biases can be introduced. Prices for new products usually decline as sales volumes increase so too rapid a introduction of new items may lead a downward bias. Periodically, the weights should be updated—every 10 years as a general rule of thumb. This brings up if or how the index series are linked for continuity. If the indexes are linked, does one link on a current period and not revise earlier indexes or is a link made somewhere between the two base weight periods when both sets of weights provide essentially the same index. In this case, historic revisions must be made. The Bureau of Labor Statistics links the Consumer Price Index on the current basis. SRS links the Index of Prices Received and Paid by Farmers between the base weight periods and publishes revised indexes.

In summary, a good index must have

(1) Clear concept of purpose

(2) Data use must be valid and consistent with purpose

(3) Data must be reliable and timely

(4) Structure must be flexible to allow for change over time.

INDEXING INPUT COSTS FOR WESTERN LIVESTOCK OPERATIONS

Under the current formula for the determination of grazing rates, the indexes of cattle prices and prices paid index based on cost of production are used to adjust rates to reflect the economic condition of the previous year. The report Study of Fees for Grazing Livestock on Federal Lands 2/ discusses many of the pro's and con's for use of indexes in a formula for computing grazing fees. Livestock and input indexes were to account for short run instabilities. The Technical Committee

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specified the basic prices paid subindexes and the sources of weights to be used. A detailed discussion of the index structure and data used are contained in Appendix C, Part (a) of the report 2/. This section will discuss technical improvements or options and limitations for the grazing fees Prices Paid Index (PPI) based on the earlier indexing sections and address some of the questions and comments received over the past several years. The use of PPI is confusing for many data users. For a more descriptive name this paper will use Input Costs Index (ICI) for beef cattle production.

Purpose: The concept of what the index represents should be clearly stated. This would provide the guidelines for the technicians to make sound decisions on the index construction and permit the public to better evaluate procedures. For example: should only the variable costs of production be included, or should feed expenses be included or excluded? As long as current available data series are used, many compromises will be required so that guidelines are needed to provide direction for both current indexes and for improvement if additional data series would become available.

After the fixed and variable costs are defined, then appropriate index representation for these components must be found. If an appropriate index cannot be found then the relative importance from that component must be distributed over all the remaining components or it must be combined with another component or one developed to provide representation. The composition of the components index may not contain the items actually purchased by the producers. However, this will not create a problem if the representative items are moving with the same trend as the items specifically purchased.

Base Weight Period: From a statistical viewpoint, the base weight period should be updated to a more recent period. Weights usually shift gradually so

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updating weights on a periodic basis, about every 10 years, should avoid major shifts in index level and limit distortions which occur when linking index series. Presently, the base weights used in the component indexes to weight the commodity prices to a subgroup index are based on 1971-73 production expenditure data. These component indexes are combined to an ICI for grazing fees using weights based on 1976 Cost of Production Survey information.

The base period to derive the relative importance should correspond to a time period when the economy of the farm sector is reasonably stable and prices do not have distorted relationships. However, it is also highly desirable to have all components of formula use the same reference period. Since the Forest Service's and BLM's appraisal survey was conducted in 1982 and 1983; cost of production data are available to derive weights, and SRS expects to updated the entire Prices Paid Index series to a 81-83 period in 1985, a base weight period falling in the 1980-83 time frame would be a logical choice. Use of a two or three-year average of the cost of production expenditures for weights is suggested to reduce the impact that the year to year variability would have on a single year base period. The updating of weights for the grazing fees ICI should be done when the national Prices Paid Index weights are updated. This would keep all the base weight periods near the same point in time. Base weight periods do not have to be identical. If the base weight periods differ, each index would be computed for the respective base weight period equal 100. Then, these indexes can be converted to a common base equal 100.

Commodity Coverage: Items priced for the index computation should represent all of the major expenditures of the livestock producers or as defined by the index purpose. Major expenditures not adequately represented in the current indexes are veterinary services, hauling and marketing expenses. In practice, it is

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questionable if the cost of obtaining a reliable data series for these items would result in a significant increase in the precision of the index. The SRS annual Farm Production Expenditure survey does collect expenditures for these items. These expenditures could be used in the index. However, the data would lag the other data by a year and change in expenditures would reflect both changes in cost per unit plus the change in useage. If use is relatively fixed from year to year this procedure can be a fair approximation of price change. Sharp or even moderate year to year shifts could distort the index. For these items, shifts in inventory and prices would result in some year to year variation so benefits from using the expenditure data may be marginal. Relationships should be evaluated before making a decision to use the expenditure data.

Another factor which should be recognized in selecting commodity components is that prices of inputs of agricultural origin (grain, hay, and replacement livestock) are subject to much wider fluctuations than products from the other sectors of the economy. Historically, agricultural commodity prices have not increased as rapidly as non-farm origin items. In the current ICI all of the weight is for items of non-farm origin while in the COP total variable cost component about 30 percent is for items non-farm origin. Thus, the ICI is overstating the input cost increases. From 1976 to 1982 the variable costs for cost of production increased 311 percent while the ICI increased 228 percent in the same period.

Geographic Base: Ideally, all parts of a formula should have the same base and relate to the same geographic area. Prices paid indexes are computed only at the U.S. level but the Forage Value Index (FVI) and Beef Cattle Price Index (BCPI) are for the Western U.S. From the standpoint of sample data reliability using the current data series, state level indexes are not feasible because of the level of

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reliability and stability when samples are changed. Using the entire western region for the FVI and BCPI would provide reliability more nearly comparable with the national data used for the ICI. The 1977 report approved using national data since most input and commodity prices changes are influenced at the national rather than regional levels. Price level differentials usually exist because of transportation and distribution costs.

Price Aberrations: Since only a few items are used to represent a number of items in an index, unusual or abnormal price fluctuations can distort an index. Generally, the factors causing the price aberrations result from unexpected situations or actions such as the rapid rise of gasoline prices in 1979. The impact of price aberrations should be considered in the selection of items to be priced and the amount of weight for any one item in the total index. A rigid formula with no provision for departure is not recommended for administrative determinations. Neither is a rigid adjustment formula recommended to adjust the indexes if the change exceeds certain levels. Since future aberrations cannot be anticipated, the impact of a rigid adjustment formula cannot be accurately anticipated and it may compound the distortion rather than make a corrective adjustment. Some discretionary authority is needed to depart from formula action in unusual situtations.

Index Life: The useful life of an index depends on its purpose, design and changes occuring in the industry. A statement of purpose should define the major concern and use of the indexes. Is its primary purpose to measure year to year changes? Changes from a base period? Is it necessary to have a long time continuous series or can series be for fixed periods with or without overlapping data? Is the index to represent only cow-calf operations or the total cattle

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industry for the region? These questions need to be addressed in designing of the index to handle index weight revisions, index linking and substitutions of new items into the index. Production inputs change as new methodology and technology is implemented. These changes are ongoing but are difficult to measure on a short-term basis. However, in the longer term the changes will reduce the usefulness of the index.

Most fixed weight price indexes deteriorate slowly and it is almost impossible to determine an expected useful life. Periodic reviews and updating are essential to assure the indexes are relatively current. Based on past experience, a complete review about every 10 years should be staisfactory unless radical shifts have occurred in production methods.

Structure of Grazing Fee Formula: The formula is made up of three parts, a base fee which is indexed by the change in grazing rates and then subject to further adjustment using an ability to pay component. The formula is as follows:

$$Fee = \$1.23 \times \left[\frac{FVI + (BCPI - ICI)}{100} \right]$$

$$= \$1.23 \times \frac{(FVI + BCPI - ICI)}{100}$$

It is assumed the intent of the formula was to drive the base fee using the Forage Value Index (FVI) and then adjusting for ability to pay. If this is correct, then the formula may not be functioning as intended. This can be illustrated by the following examples:

Data	Year 1	Year 2	Year 3	Year 4
FVI	120	110	110	120
BCPI	130	140	130	130
ICI	140	140	145	140

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Year 1	Fee = \$1.23 X $\dfrac{(120 + 130 - 140)}{100}$ = \$1.23 X 1.10 = \$1.35
Year 2	Fee = \$1.23 X $\dfrac{(110 + 140 - 140)}{100}$ = \$1.23 X 1.10 = \$1.35
Year 3	Fee = \$1.23 X $\dfrac{(110 + 130 - 145)}{100}$ = \$1.23 X .95 = \$1.17
Year 4	Fee = \$1.23 X $\dfrac{(120 + 130 - 140)}{100}$ = \$1.23 X 1.10 = \$1.35

The fee is the same for years 1 and 2 despite higher cattle prices, lower forage cost and no change in input cost. Logic says there is more ability to pay in year 2. Year 1 was fully discounted because the ICI was above the BCPI. Historically, the prices for commodities of non-farm origin increase more rapidly than farm origin commodities which can give a rather consistent downward bias. Also, the formula uses only non-farm origin items for the measure of input costs. This suggests that a weighting procedures may be needed in the formula to better account for the input cost for items of farm origin.

The current formula was to be driven by the indexed changes in private grazing land lease rates in order to maintain and annually acquire fair market value. However, adjustment by an ability to pay factor is added to offset adverse economic effects. The relationship of these two objectives need to be evaluated in terms of their original intent.

The ability to pay may be expressed as total cash receipts less total expenses. The BCPI represents average total cash receipts per unit for all cattle marketed so its logical counterpart would be an average input cost per unit marketed or total cash expenses for all inputs of both farm and non-farm origin. This says that feed and forage costs should be represented in the "ability to pay" component.

The following examples use the same data that was used in the earlier examples. It is assumed that items of farm origin account for 40 percent of the

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total cash expenses and non-farm origin 60 percent. The FVI is used to represent
items of farm origin and the ICI represents items of non-farm origin. These
indexes are used only to illustrate changes when the cost component is expanded to
represent all costs. This does not imply that these indexes should be used in actual
practices.

$$\text{Fee Formula} = \$1.23 \times \left[\frac{FVI + (BCPI - .6 \text{ non-farm origin} - .4 \text{ farm origin})}{100} \right]$$

Data	Year 1	Year 2	Year 3	Year 4
FVI	120	110	110	120
BCPI	130	140	130	130
ICI	140	140	145	140

$$\text{Year 1 Fee} = \$1.23 \times \left[\frac{120 + 130 - .6\,(140) - .4\,(120)}{100} \right] = 1.45$$

$$\text{Year 2 Fee} = \$1.23 \times \left[\frac{110 + 140 - .6\,(140) - .4\,(110)}{100} \right] = 1.50$$

$$\text{Year 3 Fee} = \$1.23 \times \left[\frac{110 + 130 - .6\,(145) - .4\,(110)}{100} \right] = 1.34$$

$$\text{Year 4 Fee} = \$1.23 \times \left[\frac{120 + 130 - .6\,(140) - .4\,(120)}{100} \right] = 1.45$$

Including all of the input cost components using properly weighted indexes
should make the fee changes move more in line with economic changes (cattle
prices and cost of production inputs.) Weighting procedures and available index
series need careful review to assure the most appropriate information is used.

Table 1: Comparative Price Index Changes, 1967-1983

YEAR	ICI 1/	PPITW 2/	PITW 3/	Production Items 4/ INDEX 1967=100	Farm Origin 5/	Non-Farm Origin 6/	CPI 7/
1967	100	100	100	100	100	100	100
1968	105	103	102	100	99	104	104
1969	110	108	107	104	105	109	110
1970	115	112	116	108	111	113	116
1971	121	118	117	113	114	118	121
1972	127	125	126	121	126	125	125
1973	137	144	149	146	174	136	133
1974	164	164	170	166	176	168	148
1975	193	180	187	182	169	198	161
1976	209	192	199	193	179	209	171
1977	224	203	209	200	180	223	181
1978	240	219	226	217	205	238	194
1979	268	249	260	248	246	268	215
1980	311	279	289	275	256	307	245
1981	350	304	314	295	261	342	272
1982	369	316	323	298	250	359	288
1983	377	325	331	305	259	370	298

NOTE: All indexes including the ICI are on 1967=100 base. All of the indexes except the ICI are on a calendar year base. The ICI index is on a November through October year.

1/ ICI - Beef cattle inputs cost index.

2/ PPITW - Index of prices paid by farmers including commodities and services, interest, taxes, and farm wage rates.

3/ PITW - Index of prices paid by farmers for production goods and services, interest, taxes and farm wage rates

4/ Production Items - Index of prices paid by farmers for production items.

5/ Farm Origin - Index of prices paid by farmers for items of farm origin - feed, replacement livestock and seed.

6/ Non-Farm Origin - Index of prices paid by farmers for items of non farm origin including fertilizer, agricultural chemicals, fuels and energy, farm and motor supplies, autos and trucks, tractors and self-propelled farm machinery, other farm machinery, building and fencing materials, farm services and cash rent, interest, taxes and farm wage rates.

7/ CPI - Consumer Price Index - Bureau of Labor Statistics.

TABLE 2: Cattle Cost of Production Budget by Cost per Cow for Cow-Calf Operations, All Herd Sizes, Western Region.

Source: USDA-ERS

Item	1976	1980	1981	1982
		Dollars Per Cow		
Feed	$45.91	$99.56	$106.45	$106.13
Hired Labor	6.23	19.48	20.82	21.63
Other Variable Expenses	18.33	41.30	46.15	47.69
Total Fixed Expenses	28.62	74.35	82.49	89.00
Total Cash Receipts	99.09	234.69	255.91	264.45

TABLE 3: Cattle Cost of Production Items as a Percent of Total Cost for Cow-Calf Operations, All Herd Sizes, Western Region.

Item	1976	1980	1981	1982
		Percent of Total Cash Expense		
Feed	46.3	42.4	41.6	40.1
Hired Labor	6.3	8.3	8.1	8.2
Other Variable Expenses	18.5	17.6	18.0	18.0
Total Fixed Expenses	28.9	31.7	32.3	33.7
Total Cash Expenses	100.0	100.0	100.0	100.0

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